



Missouri Department of Natural Resources

Water Quality Coordinating Committee Water Protection Program

Minutes

September 20, 2005

WATER QUALITY COORDINATING COMMITTEE

DNR Conference Center
1738 E. Elm Street
Bennett Springs Conference Room
Jefferson City, Missouri

September 20, 2005
10:00 a.m.

MEETING AGENDA

Ecological Drainage Units, Scott Sowa, MoRAP

Nutrient Criteria Plan, Mark Osborn, WPP

Other

Update on Water Quality Standards Revisions

Agency Activities

Meetings & Conferences

MISSOURI WATER QUALITY COORDINATING COMMITTEE

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MINUTES

Attendees:

Becky Shannon	DNR/WPP/Water Pollution Control Br.	Roger Rector	Macon Municipal Utilities
Jack Jones	University of MO Columbia	Bob Lerch	USDA-ARS
Randy Sarver	DNR/Env. Services Program	Jen Nelson	USDA-ARS
Stuart Harlan	DNR/Env. Services Program	Mohsen Dkhili	DNR/WPP/Water Pollution Control Br.
Steve Taylor	ERC	Mary Clark	DNR/WPP/Water Pollution Control Br.
Ken Midkiff	Sierra Club	Ann Crawford	DNR/WPP/Water Pollution Control Br.
Paul Andre	MO Dept. of Agriculture	Randy Crawford	DNR/Env. Services Program
Dorris Bender	Independence Water Pollution Control	Gary Baclesse	DNR/Soil & Water Conservation Program
John Waitman	Springfield Wastewater Operations	Greg Anderson	DNR/WPP/Water Pollution Control Br.
Cindy DiStefano	MDC	Wendi Rogers	UMC-FAPRI
Candy Schilling	ERC	John Lory	University of MO Columbia
Bob Hentges	MO Public Utility Alliance	Troy Chockley	USDA-NRCS
Marty Miller	Newman, Comley & Ruth, PC	Glenn Davis	USDA-NRCS
Joe Engeln	DNR/Office of the Director	Laura McCann	University of MO Columbia
Robert Brundage	Newman, Comley & Ruth, PC	Bob Ball	USDA-NRCS
Patrick Splichal	SES, Inc.	Ted Salveter	City Utilities
Buffy Santel	MSD	Tom Wallace	MEC Water Resources
Terry Timmons	DNR/WPP/Public Drinking Water Br.	Dan Obrecht	University of MO Columbia
Frank McDaniels	DNR/WPP/Public Drinking Water Br.	Georganne Bowman	DNR/WPP/Water Pollution Control Br.
Bonnie Liscek	EPA Region VII	Tony Thorpe	University of MO Columbia-LMVP
Stacia Bax	DNR/WPP/Water Pollution Control Br.	Caitlyn Peel	HBA of Greater St. Louis
Anne Peery	DNR/WPP/Water Pollution Control Br.	Scott Sowa	MoRAP
Tim Rielly	MDC	Mark Osborn	DNR/WPP/Water Pollution Control Br.
Miya Barr	USGS-MO Water Science Center	Darlene Schaben	DNR/WPP/Water Pollution Control Br.
Jeffrey Corbin	Macon Municipal Utilities		

Introductions were made.

Ecological Drainage Units, Scott Sowa, MoRAP

Handouts: PowerPoint Presentation; map of Ecological Drainage Units in Missouri

Scott talked about the classification system for ecological drainage units. The classification system was set up to provide the geographic framework for conserving fresh water biodiversity in Missouri. The objective was to identify relatively distinct riverine ecosystems at multiple spatial scales. Each level of organization is critical in enhancing the understanding of the spatial distribution and the distinctive types of ecosystems that exist on the landscape. Monitoring also plays a critical role. Linking monitoring and biodiversity conservation efforts is critical to conserving the nation's natural resources. If those two efforts are not integrated, neither will work. A common obstacle to biomonitoring and biodiversity conservation is developing methods to classify the nation's tremendous diversity of aquatic ecosystems into relatively homogenous units that are amenable to mapping, monitoring, and assessment. Scott said there are different purposes and needs for classification but their purpose and need was for biodiversity conservation and monitoring. MoRAP's objective of the hierarchical classification framework was to identify and map

relatively distinct riverine ecosystems at multiple levels of ecological organization. They then had to define an ecosystem and determine what makes an ecosystem distinctive. Physical features and biological composition have been the different approaches to classification. Scott said the most common approach has been a combination of the two. Ecoregions generally account for structural and functional variation in freshwater ecosystems. The problem with ecoregions is that it doesn't account for freshwater biodiversity. It does not account for species-level compositional variations or define interacting systems. He showed a map where Missouri has freshwater islands in its landscape. This is critical to natural resource conservation, especially species conservation. This is the basic theme of what MoRAP was trying to account for. They developed an 8-level classification hierarchy to include all the complex, complicated elements of natural variation across the landscape. Scott went through each level and talked about how they were delineated and what was accounted for in each classification. To account for the distinct assemblage that occur because of isolation factors in the landscape, they divided the state into distinct hydrologic units (HU) called ecological drainage units (EDUs). To do this they linked fish community data to the individual stream reaches in the National Hydrography Dataset (NHD) by comparing fish assemblages across each HU across the state. They also used other analyses to help define the EDUs. He handed out a map of the resulting EDUs. There is a tremendous diversity of stream types that occur on the landscape throughout the Ozarks. They wanted to account for in-stream habitat conditions. It has influence on the local biological assemblages. EDUs are not only unique in their assemblages because of their distinct evolutionary histories but no EDU has the same combination of land type. They did not use land use or land cover to help define the EDUs. Scott said they couldn't let the data collected drive how units are defined for conservation and reporting on the landscape. In summary, Scott said they had to integrate monitoring and biodiversity conservation efforts. A common geographic framework is the first step toward integration. There are numerous physicochemical and evolutionary processes that collectively determine local aquatic assemblages. The existing classifications do a good job of accounting for differences in reference criteria but fail to meet the definition of an ecosystem. EDUs represent reasonable size ecosystem units that are suited for planning, management, monitoring, and reporting.

There are 17 defined EDUs in Missouri. Two others may be included later because the Kansas River and Des Moines River are only partially in Missouri. MoRAP is doing this same classification for Iowa, Kansas, and Nebraska. Chapter 3 of the Aquatic Gap Report describes in detail how the classification was done. Scott had a few copies available.

There are 62 reference streams in Missouri that are considered wadeable perennial streams. The balance of the criteria is based upon the EDUs.

Nutrient Criteria Plan, Mark Osborn, WPP Handout: Nutrient Criteria Plan

Mark discussed the approaches and reasoning in development of the Nutrient Criteria Plan. Some of the nutrient issues include causative factors and response factors. Causative factors are total nitrogen, total phosphorus; response factors include turbidity, excessive algae growth, oxygen reduction, organic enrichment, and hypoxia in the Gulf of Mexico. In 2001, EPA sent a letter asking states to address nutrient issues. They developed some preliminary criteria recommendations for each nutrient ecoregion. EPA is encouraging states to develop Nutrient Criteria Plans. EPA is offering assistance through Regional Technical Assistance Groups (RTAG). Mark participates in those meeting. EPA's general recommendations for developing a plan include to specify criteria by ecoregions, identify reference conditions, look at cause and response relationships, and specific criteria development. The state can either look at the 25th percentile of all lakes and streams within ecoregions or the 75th percentile of reference lakes and streams. Mark showed a map of Level 3 ecoregions for the national nutrient strategy. Mark showed some charts where RTAG shows relationships between cause and response variables where they took into account total phosphorus, watershed size, and turbidity. This will provide a more solid basis on which to develop the nutrient criteria. He handed out a Nutrient Criteria Plan and said that it has been approved by EPA. (can also be found at http://www.dnr.mo.gov/wpscd/wpcp/wqstandards/wq_nutrient-criteria.htm) It will be developed through the

different water body types. They will look at different approaches for lakes, small streams, wetlands and big rivers. A lot of lake data has already been collected by Dr. Jack Jones and staff from UMC. He has said that most lakes in the state are artificial and use of reference conditions will not be practical. The general criteria proposed by EPA would put 75% of Missouri's lakes in non-compliance. There are significant differences in total phosphorus and total nitrogen between lakes in different eco-regions. Lake size and retention time also has an effect on the cause and response variable concentrations. The Big Rivers tend to be the most nutrient rich in the state. Some issues to deal with include variations in cause and response relationships due to regional characteristics and lake morphology; low threshold for total phosphorus concentration resulting in high chlorophyll response (20 µg/L); and criteria for designated uses may conflict with each other (e.g., whole body contact vs. aquatic life support).

The proposed approach for lakes is to first look at developing nutrient criteria for designated uses, then response variables would be compared, and lake morphology would be considered, mainly applicable in the Central Irregular Plain area. For streams, Mark said they have chosen to use the Reference Stream approach. The data will be evaluated by the level five EDUs. For wetlands, he said the classification would be based on the method by Cowardin, et al. but the development schedule for nutrient criteria is undetermined at this time.

He mentioned that a conference sponsored by EPA will be held in St. Louis on October 3-6, 2005, at the Adam's Mark Hotel, on "Mississippi River Basin Nutrient Science." Plans for criteria development on the Big Rivers in Missouri will be developed following the information received from this conference.

Several questions will be worked through as the work progresses. Development of the Nutrient Criteria Plan for Missouri is a request from EPA. If one is not developed EPA will develop one. This information is based on correspondence from EPA in 2001.

Mark asked for volunteers to form a stakeholder group. If you are interested contact Mark at mark.osborn@dnr.mo.gov. Meetings will be scheduled later.

Georganne Bowman displayed a map of Missouri representing all the lakes sampled by UMC. The lakes have had at least four seasons of sampling data. The map was divided by level three ecoregions. It also showed all classified lakes and reservoirs with sampling data. The map is a work-in-progress.

Dan and Tony had general background information available on how lakes work. Dr. Jones explained lake 'residence time' and nutrient runoff within a watershed. Several questions were asked that the stakeholder group will need to work on. Becky said it's important that the stakeholders work together and figure out what works for Missouri.

Other

Update on Water Quality Standards Revisions, Stacia Bax

Both the Water Quality Standards and Effluent Regulations have been filed with the Joint Committee on Administrative Rules on September 9, 2005. They have 30 days to review. The rules will then be filed with the Secretary of State. The final rule is expected to be in effect by December 31, 2005. The rule can be sent to EPA for approval when final. EPA has 60 days to approve; if they disapprove, they have up to 90 days.

This fall, they plan to discuss antidegradation implementation procedures and unclassified streams. Additional items may be addressed in the next rulemaking.

303(d) List, Stacia Bax

A draft list is available. A question and answer session type of meeting is scheduled for Thursday and Friday, September 22-23, 2005, at the Lewis and Clark Building. Everyone is invited. Contact Darlene if you would like to receive the 303(d) list information.

The listing methodology and the worksheet with data that the list is based on are available on Internet. The draft list will be placed on public notice after the initial stakeholder discussions and before being filed as a proposed rule.

Agency Activities

Tony Thorpe plans to scan Dan's report and place it on the LMVP web site – www.lmvp.org. Tony also had copies available of the LMVP data report and summary page.

Georganne Bowman is working on a Mercury Task Force to put together legislation to send to Representative Sater. They have also put together two Executive Orders. One to remove mercury from schools and one to the Office of Administration to revamp purchasing requirements so the state does not purchase mercury products.

John Lory mentioned a conference to be held in Ames, Iowa, September 26-28, 2005, to present various BMP papers. Becky asked John to let us know when the proceedings are posted on Internet.

Greg Anderson said he is making recommendations to EPA on the FY 2005 319 grant. He also mentioned that the group will be contacted for input on the Nonpoint Source Management Plan for the Year 5 major revisions. He said the Request for Proposals for FY 2006 funds should be coming out soon.

Bob Hentges introduced J.D. Luster, who will be involved in searching for Bob's replacement.

Paul Andre mentioned the Pesticide Management Plan rule may be dead.

Ken Midkiff has attended the Governor's Review Committee meetings. He mentioned some of the proposal before the committee. They will be meeting again on September 22, 2005. The report will be sent to the Governor after that meeting.

Scott Sowa had available Chapter 3 describing the Classification of Riverine Ecosystems.

Meetings & Conferences

Oct.	18	World Water Monitoring Day
	18	Water Environment Federation Conference, Columbia
mid-Oct.		Low Impact Development technical training